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REMARKS

Pending Claims

Assuming entry of this amendment, claims 1-13 are still pending. Claims 1, 10 and 11 are independent.

Allowable Subject Matter

The applicants thank the Examiner for allowing claim 10.

Claim Rejections**35 U.S.C. §102 – *Huang***

The Examiner rejected claims 1-3, 11 and 12 as being anticipated by US 5,416,849 (*Huang*). In short, the Examiner asserted that *Huang* discloses every element of independent claims 1 and 11.

Claims 1 and 11 have been amended to include limitations previously found in claim 7. The applicants discuss the significance of this in greater detail below, with respect to the §103 rejection based in part on US 4,021,777 (*Shepard*), but they note that inclusion of these claim 7 elements technically overcome *Huang* as a §102 reference. Even without inclusion of claim 7 elements, however, the applicants' invention as claimed still has advantageous features not found in *Huang*. Consider the following portions of two elements of claim 1 (with corresponding language in claim 11):

...
automatically receiving from any of a plurality of arbitrary senders, via a publicly accessible transmission channel, an electronic representation of an image of any of a plurality of physical forms, having at least two different layouts, said representation being generated by a standard, conventional image-conversion device ...;

...
automatically and uniquely identifying the physical form from the electronic representation of its received image;

Huang's system, lacks many of these features, as it must. For example, see (emphasis added):

Col. 4, lines 51-53

... automatically process a selected **batch** of documents whose fields have certain, anticipated, **uniform characteristics**

Col. 5, lines 27-30

When a **selected batch** of document forms is to be processed by the system, the method of the invention begins by inputting a document form processing **template 33 which has been selected by the user.**

Note that *Huang's* processing operates with only one available template 33 at a time, and that this template must be "selected by the user" before processing such as form recognition and field extraction. This is acceptable in the *Huang* system because the forms to be processed are in a selected batch; selection must reasonably be done manually. In short, *Huang* discloses a batch-processing system with each batch of forms being selected and known (for template selection) before processing through manual intervention.

Huang could not (as recited in the applicants claims 1 and 11), "automatically receiv[e] ... an electronic representation of an image of any of a plurality of physical forms having at least two different layouts," and then process them, especially not in real time (as opposed to batch processing), since the user would not know which template to select: If the user doesn't select a template manually then *Huang's* processing system will not know what to do with a given form. If the user does select a template, then it would be appropriate for only received forms having the corresponding layout. *Huang* therefore lacks several of the features recited in the above-copied elements of independent claims 1 and 11.

35 U.S.C. §103 – *Huang* and *Shepard* as applied to claim 7

The Examiner rejected claim 7, building on assertions relating to claim 6, as being unpatentable for alleged obviousness in view of a hypothesized combination of *Huang* and *Shepard*. In particular, the Examiner wrote that:

"the combination of *Huang* and *Shepard* teaches a method for collecting reports further comprising: Storing an electronic representation of a template of each included physical form (*Huang* col 11, ln 55 – col 12, ln 50, wherein forms are generated and stored in Form Processing Template Definition Program #57A of fig 5)"

Claims 1 and 11 have been amended to incorporate most of the elements of previous claim 7, so the applicants wish to address the Examiner's assertions relating to claim 7 even though he has not yet applied them to these independent claims.

The applicants readily concede that the cited section of *Huang* teaches generating and storing templates – something must be created in order for the user to make a selection -- but this doesn't eliminate the requirement in *Huang* for the user to manually select which template 33 to use before *Huang* can begin to process forms in the first place.

The Examiner did not write just which part of *Shepard* he thought applies specifically to claim 7, but in the interest of avoiding needless prosecution delay, the applicants assume that the Examiner's analysis relating to claim 6 was meant to carry over to its dependant claim 7. Referring to claim 6, the Examiner wrote:

Shepard ... teaches a method comprising associating at least two different physical forms with different senders, and automatically determining the identity of each sender based on the received image of the physical form (*Shepard*, col 5, ln 16-18, form with ID number is associated with a specific customer. The method as taught by *Shepard* comprises processing multiple forms from multiple customers without a loss in operating efficiency, as seen in col 8, ln 44-53).

As an initial matter, the applicants observe that *Shepard* fails to teach the features recited in the applicants' claim 1 and 11 of:

"pre-storing an electronic representation of a template for each of the plurality of physical forms" and
"automatically comparing the received electronic representation of the image of the physical form with at least one of the pre-stored electronic representations of the plurality of templates"

Indeed, in *Shepard*, there are no pre-stored templates to compare a form with, and arguably no notion of a template at all: As discussed from col. 5, line 49, to col. 6, lines 37, *Shepard's* scanner control system embeds information about where a form's information is located in a "Service Number" printed onto each form itself, that is "derived from the scanned document" (col. 1, lines 60-61); thus, *Shepard* requires precise, numerical position information (and "skip distances") as part of each form. Note further that *Shepard* would be unsuitable for use in processing a received form "automatically ... from any of a plurality of arbitrary senders, via a publicly accessible transmission channel" since *Shepard* presupposes that "all indicia pre-printed on the document form 100, with the exception of the control code characters, is of a color to which the scanner 10 does not respond" (emphasis added). *Shepard* would, for example, therefore not function properly if the form being fed into his scanner were received from a standard fax machine, which does not transmit in color. Moreover, *Shepard's*

"control codes, termed 'Field Codes', are not identifiable as such by their location on the document, as is the ID Number. Instead, they are provided with a distinctive stylistic characteristic embodied in the character format" (col 6, lines 59-63)

Even ignoring for the moment the deficiencies of *Shepard* as compared with the applicants' invention, in particular, its lack of many of the claimed features, it would still not be obvious or even practical to combine the teachings of *Shepard* and *Huang*. As mentioned above, *Huang* is a batch processing system, and presupposes that the scanner 22 is connected to the scanner processor 23 by a *local* area network. Of course, scanned-in signals could also be transmitted farther, over a longer distance network, but this would not be convenient for *Huang's* user, who must be able to select a batch of documents to process, and requires the user to know just which form is incoming so he could select the correct template. *Shepard*, in contrast to *Huang's* batch-processing system, uses almost extreme real-time processing -- in order to be able to process a form at all, the instantaneous movements of the scanner 10 mechanisms must be controlled by the central system.

In general, incorporating one of *Shepard's* remote-controlled, custom-designed (not standard) scanners and specialized, limited, partially "invisible" forms into *Huang's* processing system would require extensive restructuring of almost everything that *Huang* teaches. For example, *Huang* would need changes relating to data extraction, converting from batch to real-time processing, eliminating user-selected processing templates 33 (used in three different places in *Huang's* processing flow – see Fig. 1B), etc.

Even if one were to successfully restructure *Huang* to incorporate *Shepard*, however, the combined system would still lack the claimed feature of the applicants' invention of "automatically identifying the location of the data fields in the received representation of the image of the form by automatically comparing the received electronic representation of the image of the physical form with at least one of the pre-stored electronic representations of the plurality of templates." In short, even a combined system would lack the flexibility, universality, convenience and level of automation provided by the applicants' invention.


The applicants therefore respectfully submit that independent claims 1 and 11 define a method and system, respectively, that have technically advantageous features not found in *Huang* or *Shepard*, whether viewed separately or in some possibly impossible but certainly unobvious and complicated hypothetical combination.

Various other claims stand rejected as being obvious in view of hypothetical combinations of the teachings of *Huang* and either Luther or Al-Hussein, both already of record, along with the applicants' analyses. None of these combinations disclose the features described above – and now further developed in the independent claims – that are lacking in *Huang* alone. Accordingly, the applicants request that the claims dependent on claims 1 and 11 be allowed along with these patentably distinct base claims.

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Respectfully submitted,

34825 Sultan-Startup Rd.
Sultan, WA 98294
Phone & fax: (360) 793-6687


Jeffrey Pearce
Reg. No. 34,729
Attorney for the Applicants

Serial No. 10/003,339
Art Unit 2625

Page 12 of 12

Docket: Call-Tell FX